SWEN90016: Software Processes and Management

Group Project: Semester 1, 2017
Project Management Plan with Agile Scrum

Part a: due	19th May 2017	5pm Friday
Part b: due	24th April 2017	5pm Monday
Part c_i: due	5th May 2017	5pm Friday
Part c_ii: due	19th May 2017	5pm Friday

Aim: Demonstrate Agile Scrum methods for Project Management and Software Development.

Work in a team to produce two *Swimlane Boards*

- A PMP board for the PM Sprints
- A SDLC board for the first Sprint of the hypothetical Software Development

Objective:

Manage a project using the Case Study attached and select an appropriate software development. You will need to work in a team with the virtual client to identify and elicit design requirements. In addition to the information included in the attached Case Study, you will be able to get additional information through questions to the virtual client on the Assignment LMS discussion forum. The virtual client may not always be available or helpful, like a real client, and may decline to answer some questions that are not requirements related. Your software project should align your IT technology with the Case Study's business strategy.

Your team will produce:

- Reflections on team work principles
- An execution of Agile Scrum methods for the PMP
- Narration of the clients' design problem and solution from the Case Study
- A set up of Agile Scrum methods for the first Sprint of the software development

You will work in a team. Teams of 4-5 students must be formed. You may choose your teams, but they need to be finalized by week 3.

Key Deliverables:

The project is divided into four deliverables. Two are intended as draft submissions for which your tutor will give you feedback. This feedback should be incorporated in the subsequent submission.

Part a:	the teamwork component of your group
Part b:	the draft Narrative Overview
Part c_i:	an initial draft PMP and SDLC
Part c_ii:	an updated and final PMP and SDLC

Mark Allocation:

Part a:	5% of your overall grade
Part b:	0% of your overall grade (this is a submission for receiving early feedback before you proceed with the rest of the project)
Part c_i:	10% of your overall grade
Part c_ii:	15% of your overall grade

Collectively, the entire assignment is worth 30% of your overall grade.

Carefully read this document, as marks will be deducted in each case where any of the specified requirements have not been addressed.

Learning Objectives

The assignment assesses your understanding of materials from weeks 1-8 of the syllabus.

Successful completion of assignment will demonstrate knowledge of and skills in:

- appropriate Agile Project Management Planning processes;
- techniques for functional analysis of a business problem described in the Case Study;
- communicating an understanding of a design problem to a non-technical audience;
- identifying appropriate IT solutions from the Case Study requirements;
- clearly articulating the business purpose of the chosen solution;
- appropriate Agile Software Development Life Cycle (and Sprint) processes;
- working as an Agile team

Submission

Once all team member details are finalized through the 'Self-enrol Group' link in the LMS a Confluence page will be created for your team. Refer to LMS.

The Narrative Overview submission (Part b) and feedback will be via TurnItIn.
The draft submission (Part c_i) will be via Confluence.
The final submission (Part a and Part c_ii) will be via the LMS submission link.

Do not submit drawing software documents. Export charts to PDF or JPEG first.

Penalty for Late Submission

Late submissions without an approved extension will be subject to a penalty of **10% per day**. Weekends count as a single day. No assignment will be accepted more than one week late.

Team Dispute Resolution

Expect to resolve disputes within your team as a standard component of team communication. If unresolved concerns over the level of contribution from each team member occur then you should alert your tutor early. Team marks may be adjusted for non-contributing team members. Where a team member fails to contribute to the group, for example by not turning up to multiple team meetings, the non-contributing team member may be 'fired' from the team. The team needs to reflect on the situation to their tutor in writing, including the details of the dates of missed meetings and the remediation attempted

Detailed Deliverables

Part a – Team Administration

Team Meetings: Agenda, Minutes and Timesheets

Your team is expected to hold formal meetings at least weekly. A genuine Scrum team holds Stand-Up meetings daily, without minutes, but this assignment requires the student team do this differently. Meetings must be held in person at a mutually suitable location. Once your team has formed, your team must:

- Use the template provided to draft an **Agenda** for your first team meeting. During this meeting, you will need to nominate your Scrum Master and team name and confirm this with your tutor.
- Use the template provided to produce **Stand-Up Meeting Minutes** for each meeting, which should be circulated to all team members. Each team member must take a turn taking notes and producing meeting minutes.
- Use the template provided to produce **Timesheets**. They should support the times shown in the meeting minutes. Students in the team can receive different marks for their time sheets.

Individual written Retrospective (500 words approximately)

Reflect on your team and how well the group functioned, the quality of the teamwork and the communication principles and style. Use the "Individual written Retrospective" LMS link that will be made available.

Assessment criteria

Completeness and clarity of documentation

Draft Narrative Overview

You must get approval for section_6, the Narrative Overview before the PMP can proceed. Early feedback will maximize your groups potential for a successful assignment. Your mark for the following submissions will be improved if you address the advice given at this early stage of the PMP.

Part c_i – Draft Project Management Plan

1. **Title Page**
2. **Executive Summary**
3. **Table of Contents**
4. **Introduction**
    a. purpose of document
    b. scope of project, focusing on time, cost and business-value criteria
    c. audience of document
    d. limitations of document

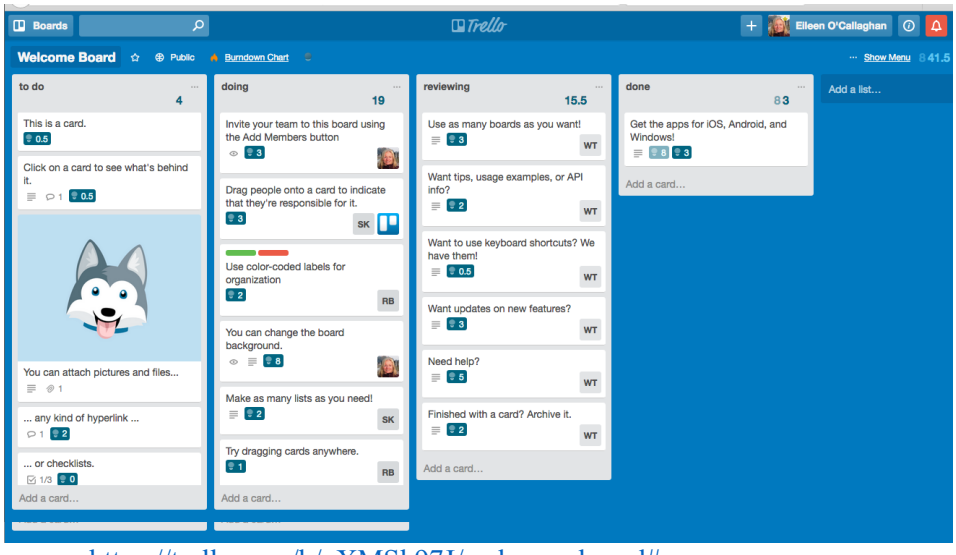
5. **Project Management Plan (PMP) using Agile Scrum**

Define how this project will be managed, implemented and controlled using Agile Scrum methods and a simulation of an "Agile swimlane board". (You must produce a visual representation of the PMP tasks, such as the board below, this one is produced by Trello[i], which is one of the tools you can use. Any other simulation tool can be considered.)

Document the high-level Project Management tasks in a list, and call it the PM Task List. Consider any list tool to capture your PM Task List. Each item in the list will be initially be an "epic" PM task and represented as a "card" on the swimlane board.

Use this template structure to write the User Stories:

At Initiation Stage, I want to identify the business goals



https://trello.com/b/pXMSk97J/welcome-board#

a. Identify the project phase of each task on the PM Task List.

b. Create a swimlane board with appropriate PMP headings and place each PM task card in one of many "todo" swimlane/s.

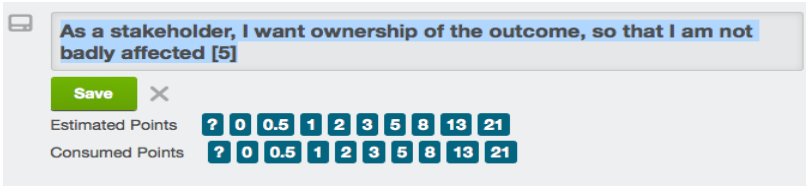
An Agile Scrum project is implemented over a sequence of short development cycles, called Sprints. These short Sprint iterations develop only a subset of the PM tasks, and the next Sprint develops the next set of PM tasks, and the process

continues over several Sprints until the project is done. You are required to plan and control all the PM tasks over multiple PMP Sprints.

For each phase/swimlane, manage the tasks that are planned, starting from the first Sprint in week 6 until the final Sprint in week 11.

c. During each Sprint, decompose these PM tasks "just-in-time" with more detail. The whole team estimates the effort involved in each low-level PM task and adds this value as "Agile Story Points" to each card.

(You can add these values manually as text on the card or use a tool such as Trello Scrum extension http://scrumfortrello.com/ to record times directly on Trello cards. It allows a two-week trial free period.)



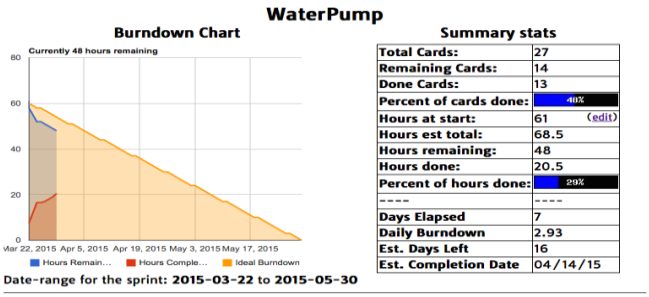
d. After Story Points have been allocated to each card, create a high-level estimate of how long the Sprint will take. Display your estimate using a Burndown Chart. (Optionally use a tool such as the free Burndown extension https://www.burndownfortrello.com/ to create an appropriate chart.)

e. The team members allocate themselves as resources to the low-level PM tasks by dragging the card into the appropriate "doing" swimlane and adding their name. When the card is done, drag it into the appropriately named "review" swimlane. When the whole team review the card, and agree that the card is done, drag it into the appropriately named "done" swimlane.

Agile asserts shared team ownership for outcomes. An activity is not done when the allocated person considers it done, but when it is reviewed and accepted by the team.

f. Update the card with an accurate measure of the actual effort taken to complete the task.

g. Create a measure of how the Sprint is progressing by using a Burnup Chart.



h. Manage the team using meetings and member timesheets.

6. **Narrative Overview** (700 words approximately)

Respond to previous feedback by updating Section_6.

Outline your understanding of the *design problem* based on the Case Study.

The Narrative Overview is used to build trust with the client, to establish you have understood their Case Study. Include the requirements you've gathered from the Case Study and the virtual client on the discussion forum into a list called the Product Backlog.

Assume you have the Scrum role of the Product Owner. You are responsible for grooming the Product Backlog by listing the "epic" User Stories in order, from highest value to lowest value, from your perspective. This ordered list will determine the scope of future projects. Low priority User Stories never get done.

You should select just one project that best suits the high priority needs of the client.

Give a high-level view of your proposed *solution*. Align the proposed solution with *business drivers*. Link business drivers from the Case Study to justify why your software development was chosen over other possibilities.

7. **Solution Overview**

Describe your proposed IT solution and specifically identify the boundary between what components are included and excluded. Use diagrams where appropriate.

Document the high-level requirements of this project in a list called the Sprint Backlog. Consider any simple list tool to capture your Sprint Backlog, such as a Word document.

Use Agile methods and create "epic" User Stories from the high-level requirements.

Use this template structure to write the User Stories:

As a <type of user>, I want <some goal> so that <some reason>"

Ref: User Stories: http://vimeo.com/43601248 and
https://help.rallydev.com/writing-great-user-story

8. Software Development Life Cycle (SDLC) using Agile Scrum

Define how this software development will be planned, executed and monitored. An Agile Scrum project is implemented over a sequence of short Sprints. These short Sprint iterations develop chunks of working software and then continue until the release is done. You are required to plan just the first Sprint of this *hypothetical* release.

a. Create an estimate of the Team Velocity in one Sprint cycle. How many Story Points can the team complete in a short iteration, (e.g., one week)? Use your experience gained from doing the Agile PMP.

b. Choose a subset of the first Sprint's "must-have" User Stories from the Sprint Backlog list.

c. Place these on your second Agile SDLC swimlane board.

d. Decompose these User Stories with more detail, "just-in-time" for the developer, at least 20 and less than 50 low-level User Stories.

The "just-in-time" (JIT) phase is used in high productivity environments.

Agile asserts knowledge is cumulative and the previous "epic" User Stories are too low quality for development needs.

Agile asserts face-to-face conversations as the best practice for gathering requirements. However, for this assignment, you will need to research literature on similar projects so that appropriate details emerge. Also, you can ask questions of the virtual client on the Group Assignment LMS discussion forum.

a. For example:
As a grain-seller,
I want to find the price offered for grade_APH wheat,
delivered at Port Lincoln silo, bought by GrainCorp,
so that I know the market value of my harvest"

b. Write Acceptance Conditions for these low-level User Stories
c. Allocate precise Story Points to these low-level User Stories

e. Calculate the Sprint's duration using a Burndown Chart. The "expected" Story Points on the cards are charted in a visual display.

f. Describe how to monitor progress using a Burndown Chart and scope creep using a Burnup Chart

9 Summary

Restate the argument for this project. Do not introduce new ideas or evidence.

10 References

Evidence of research: justify methodology, the PMP, and the SDLC.

Assessment criteria

1. Completeness of report structure

2. Project Management Plan using Agile Scrum
   a. Identification of PMP phases
   b. A list of high-level PMP project tasks, (at least 15 and less than 30 tasks).
   c. A list of decomposed low-level Sprint project tasks with time estimates
   d. References used to justify time estimates of Sprint project tasks
   e. Relevant and up to date Agile PMP swimlane chart
   f. Clarity of Agile swim lanes
   g. Detail of Burndown chart

3. Narrative Overview:
   a. Evidence the previous feedback has been acted upon
   b. Explain context from Case Study
   c. Depth of understanding of the design problem
   d. Identify business objectives
   e. Identify scope of proposed solution
   f. Complete list of high-level "epic" User Stories in Product Backlog
   g. Create a "groomed" Product Backlog list in client value priority order
   h. Identify stakeholders

4. Solution Overview:
   a. Include relevant context diagrams
   b. Link proposed solution to the business drivers
   c. Complete list of high-level "epic" User Stories in Sprint Backlog

5. Software Development Life Cycle using Agile Scrum
   a. At least 20 and less than 50 low-level, detailed Sprint User Stories
   b. References used to justify time estimates of low-level SDLC User Stories
   c. Relevance of Agile SDLC swimlane chart
   d. Clarity of Agile swim lanes

6. APA reference style

7. Quality and professionalism of presentation, including layout, structure and grammar

Part c_ii – Final Project Management Plan

Build on your submission from c_i and respond to previous feedback by updating all sections.

i Trello explained: Trello has a variety of uses, including software project management, refer to https://en.wikipedia.org/wiki/Trello